

**MINUTES
of the
SECOND MEETING
of the
SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE**

**August 1-2, 2012
Multipurpose Room, Bob Moran Building
New Mexico Junior College (NMJC)
5317 Lovington Highway
Hobbs**

The second meeting of the Science, Technology and Telecommunications Committee was called to order by Senator Timothy M. Keller, chair, on Wednesday, August 1, 2012, at 10:00 a.m. in the Multipurpose Room of the Bob Moran Building at the NMJC.

Present

Sen. Timothy M. Keller, Chair
Rep. Cathrynn N. Brown
Sen. William F. Burt
Rep. Jim W. Hall
Rep. Debbie A. Rodella
Rep. James E. Smith

Absent

Rep. Roberto "Bobby" J. Gonzales, Vice Chair
Sen. Dede Feldman
Sen. Phil A. Griego
Rep. Conrad D. James
Sen. Linda M. Lopez
Sen. Steven P. Neville
Rep. Nick L. Salazar
Rep. Luciano "Lucky" Varela

Advisory Members

Rep. Ray Begaye (8/1)
Sen. Richard C. Martinez
Rep. Jane E. Powdrell-Culbert

Sen. Carlos R. Cisneros
Rep. Ben Lujan
Sen. William H. Payne
Rep. Danice Picraux
Sen. John M. Sapien
Rep. Don L. Tripp
Rep. Richard D. Vigil

Guest Legislators

Rep. Sandra D. Jeff (8/1)
Sen. Gay G. Kernan (8/1)

(Attendance dates are noted for members not present for the entire meeting.)

Staff

Gordon Meeks, Legislative Council Service (LCS)
Ralph Vincent, LCS
Elizabeth Shaw, LCS

Guests

The guest list is in the meeting file.

Handouts

Handouts and other written testimony are in the meeting file and are posted on the New Mexico Legislature web site.

Wednesday, August 1

Senator Keller asked the members to introduce themselves, and after doing so, he welcomed the first speaker, Greg Fulfer, chair of the Lea County Commission, and asked that he introduce his staff.

Welcome

Mr. Fulfer introduced himself and his staff to the committee and thanked the members for making the trip down to Hobbs. He then relayed to the committee what is happening within Lea County. He stated that the county is currently working very hard to diversify its economic base. URENCO has been a huge success for Lea County; it has been a core business that has allowed for the growth of the nuclear energy industry. The presence of URENCO has brought Nuclear Isotopes to Lea County, which will reuse the waste generated by URENCO. Mr. Fulfer assured the committee that the waste generated by Nuclear Isotopes would be harmless, and he stated that it can be used as fertilizer. Jewel is another energy harvesting plant that is expected to begin operation in September 2012. This plant will focus on the use of algal bacteria to transform algae to biofuel. Wildcat Wind is currently installing wind tunnels in Lovington that are combined with natural gas and yield a very high ratio of electricity production.

Mr. Fulfer informed the committee that Lea County has lost the Pegasus CITE Project, but regardless of the loss, the project has done many positive things for the county. Mr. Fulfer then continued on to state that the NMJC has formed a foundation for research and development that focuses on working with virtual technology.

Innovations in Energy and Extractive Industries

Dale Ganaway of Emergent Technologies introduced himself to the committee. He stated that Emergent Technologies originated in West Texas and currently has \$50 million under 19 portfolio companies spread across three universities. Emergent is in Lea County because of the appetite that the county has for innovation. Mr. Ganaway informed the committee that one of Emergent's primary goals is to license technologies. He gave the example of Eclad coatings, which are pulse-plasma coatings used to coat nanoparticles, making them a functional surface for the attachment of other particles. He stated that the first area of application for this technology is sports apparel and goose down.

Mr. Ganaway then provided the committee with some suggestions on how to encourage and improve the technology industry in New Mexico. He stated that giving larger tax credits to

early stage technology companies would be very beneficial in encouraging companies to make the move into New Mexico. He said that consideration of a tenure track for early commercialization in New Mexico's universities would help recruit bright young researchers. He also suggested that New Mexico should support innovative new approaches to technology transfer.

Dr. Satish Ranade of the Klipsch School of Electrical and Computer Engineering at New Mexico State University (NMSU) introduced himself to the committee. He began his presentation by informing the committee that the electric power system that the state has always known is now being called the electric energy system. Dr. Ranade stated that the current system is an adjustment system and is interconnected throughout the eastern and western United States. He stated that many people today feel that the current energy system has become unreliable. Dr. Ranade explained that as systems become extremely complicated, they are able to deal with standard situations easily, but when more dramatic events take place, the system may become less reliable. These dramatic events have increased in frequency.

Dr. Ranade then read from the vision document that the federal Department of Energy produced and asked what the new power grid would look like. He stated that everyone has to have access to abundant and affordable electricity. He discussed the importance of the development of nuclear energy as an energy source, and that during the interim developmental period, the state will still be substantially invested in oil and renewables. According to Dr. Ranade, the current problem with renewable energy sources is that there are three components of the overall system that need to be taken into account: the consumer, the utility companies and the renewable energy industry. He stated that the biggest change to the energy system is the demand; the consumer is trying to use different amounts of energy, and a challenge that faces the electric industry is how to accommodate demand. One solution to the problem of demand that Dr. Ranade provided to the committee is that more wire will be needed to accommodate an increase in demand.

One innovation that Dr. Ranade brought to the attention of the committee is the Smart Grid. He stated that the Smart Grid concept refers to devices, software and processes that use extensive communication and control capability with the goal of using components in a system to their full capabilities. Smart Grid components will have inherently better response times, thus contributing to better control and protection. He continued on to state that energy storage is the biggest innovation that has the potential to change the future.

Committee questions and discussion included:

- concerns that overlapping regulation is slowing the development of energy companies that are coming to New Mexico;
- the potential for adding additional wires to existing towers;
- the issue of cyber security with relation to the implementation of a Smart Grid system; and
- pricing of various energy storage technologies.

Telecommunications Issues

Leo Baca, lobbyist for CenturyLink, told the committee that his company employs nearly 625 people in New Mexico, with approximately 350 working in the Albuquerque metro area, and that in 2010, CenturyLink paid approximately \$55 million in payroll, with another \$18 million in property and other taxes. He said that over the past 10 years, Qwest/CenturyLink has invested over \$1 billion in its New Mexico infrastructure, much of it in areas also served by competitors where capital recovery is subject to market forces. He gave a complete description of CenturyLink's investments in New Mexico and its economic impacts to the state over the last few years.

He said that competition is real and growing in New Mexico and that CenturyLink faces competition from large competitors, including wireless providers such as AT&T, Verizon, Sprint and T-Mobile; cable companies such as Comcast and Cable One; voice-over-internet-protocol (VoIP) providers such as Vonage and MagicJack; wireline companies such as tw telecom, City Link and Cyber Mesa; and many others. He testified that in other states, policymakers have relaxed incumbent local exchange carriers' (such as CenturyLink) regulations in recognition of competitive forces. He said New Mexico is rather unique in its lack of regulatory relief. CenturyLink filed a petition with the Public Regulation Commission (PRC) on September 9, 2011, based on Section 63-9A-8 NMSA 1978, which requires the PRC to determine if public telecommunications services are subject to effective competition. If CenturyLink's markets are found to be effectively competitive, the PRC must determine the appropriate regulatory changes to "modify, reduce or eliminate rules, regulations and other requirements applicable to the provision of such service, pursuant to the statute". Bills have been introduced to update the statute to reflect today's competitive environment; however, CenturyLink's competitors have succeeded in stalling any legislation. CenturyLink is currently a highly regulated company in a mostly unregulated communications environment. Large, well-funded competitive local exchange carriers (CLECs) and wireless, VoIP and cable television competitors are either lightly regulated, he said, or not regulated at all by the PRC. Wireless phone numbers in New Mexico now outnumber landlines by more than two to one. The U.S. Census Bureau reports that New Mexico's population has grown from 1,819,041 in 2000 to 2,059,179 in 2010, an increase of 13.2%, at a time that CenturyLink's access lines have fallen from 883,302 to 541,955 — a decrease of 39%.

Additionally, he said that hundreds of millions of dollars in government grants and stimulus funds are supporting competition in much of CenturyLink's service area in New Mexico, and many of these deployments are nearly on top of existing CenturyLink fibers, thus using public funding to create artificial competition against private investment.

He said CenturyLink is seeking modification of existing regulation (not deregulation) of service quality of retail telecommunications services throughout New Mexico to be in parity with all CLECs in the state and recognize the power of competitive markets to produce increased innovation and investment at fair prices.

The petition filed with the PRC in 2011 requests authority to withdraw Verizon's tariffs for competitive intrastate retail communications services in New Mexico and to eliminate antiquated regulations that no longer serve a valid public purpose. On July 24, 2012, a PRC hearing examiner ruled that an "effective competition" determination was not required in order to allow Verizon to withdraw its tariffs and not be required to file individual contracts.

Mr. Baca also addressed the Federal Communication Commission's (FCC's) Universal Service Fund (USF) policies and carrier-of-last-resort obligations.

Bill Garcia, Windstream, addressed the committee about the Connect America Fund, part of the National Broadband Plan. Phase 1 allocates more than \$60 million to Windstream, but the criteria includes a \$775 per customer limit. Windstream has already deployed broadband in most of its service areas, including New Mexico, but the remaining areas for deployment are the most expensive areas, and the limit is not reasonable. Windstream is seeking a waiver from this limit and is prepared to invest \$12 million of its own in exchange for the waiver. He asked for the committee's support for this waiver request to the FCC.

Charlie Ferrell, executive director for the New Mexico Exchange Carrier Group (NMECG), explained that the NMECG is an industry association that has 11 rural telecommunications companies that provide service covering over 63% of the state's geography, or nearly 77,124 square miles, and to about 17% of New Mexico's wireline telecommunications service consumers. He said the combination of large areas served and low population density means that the average rural New Mexico telephone company serves fewer than 2.24 customers per square mile and that it is extremely costly to provide high-quality telecommunications service to customers in rural areas of the state. He went on to explain to the committee that in the 1950s and 1960s, it was clear that the only large telephone provider in the state was unwilling to spend the money needed to provide phone service in remote rural areas. Therefore, rural residents banded together and formed cooperatives and small companies, he said, to provide service to their communities and surrounding rural areas. Because of the extraordinarily high cost of service, the only way these small rural providers could keep customer rates affordable was by obtaining low-interest federal government loans and financial support from a USF, which was established by the federal government and administered by the FCC, expressly to assure that residents and businesses in the rural areas of the country had access to telephone service at affordable rates. The FCC's rules have historically provided rural telecommunications companies and cooperatives with USF support to reimburse to these companies a portion of the costs that they incur to provide service in high-cost rural areas, he said. Mandatory contributions to the USF are made by all companies that provide certain interstate communications services. Rural telecommunications companies and cooperatives have relied on the USF to build and maintain broadband-capable networks throughout the country, including New Mexico. He told the committee that the NMECG member companies have invested over \$216 million in capital investments in improving their networks and replacing facilities that are old and have reached their useful life span with new copper and fiber optic cables. Over 95% of the rural company customers can have broadband service if they want it. He said predictable and sustainable

support from the USF continues to be needed, not only to deploy broadband to the remaining unserved consumers, but also for ongoing network maintenance and upgrades. As a result of reforms to the USF announced by the FCC in 2011 and early 2012, he said, the FCC is extending the USF support funding that led to the success of the small rural telecommunications companies and cooperatives to areas served by much larger telephone companies that serve both urban and rural areas. While the NMECG believes that this goal could have been accomplished in ways that provide access to broadband service for all Americans, the FCC is instead reducing support for rural companies and redistributing those resources to companies that have not historically made comparable investments in their rural service areas. This policy is likely to make existing network investments of rural telecommunication companies and cooperatives unsustainable, he testified. The NMECG companies may be forced to raise the rates they charge their customers to unaffordable levels in order to cover costs, he said, or they may be forced to cut spending on broadband deployment and network maintenance. Therefore, he said, the rural carriers may find that they need to seek support from the New Mexico USF, which was established by the legislature to ensure that universal service at affordable rates is preserved and advanced in rural areas of the state. The burden of providing sufficient, predictable and sustainable support in rural areas may partially shift to New Mexico. The NMECG is hopeful that such assistance can be obtained with the help of the PRC with a minimum amount of regulatory expense and without unnecessary delay if it becomes necessary for rural carriers to seek assistance to ensure that affordable telecommunications services continue to be available to customers in rural high-cost areas of the state. He described HJM 9, passed during the last regular session, recognizing the reforms being implemented by the FCC and requesting the appropriate interim legislative committee to consider reduced regulation for incumbent rural telecommunications carriers. The memorial asks that the committee look at further streamlining regulation for rural carriers with the objectives of further reducing the costs and burdens of regulation, permitting pricing flexibility and expediting required rate approvals. He provided summaries of changes to several sections of law seeking to meet the objectives of the memorial and asked the committee to endorse the legislation at its last meeting during the interim.

John Badal, Sacred Wind Communications, described a case his company has been involved in before the PRC. The PRC took 20 months, incurring \$750,000 in costs to the company with over 42 boxes of data and 17 rounds of discovery, to make an adverse ruling against the company. Mr. Badal said that no small company should have to face this kind of regulatory proceeding. He gave the committee three statutory citations requiring relaxed rules for rural telephone companies, yet the PRC ruled that Sacred Wind is not an incumbent rural telecommunications carrier or a rural local exchange carrier under the Rural Telecommunications Act of New Mexico. He said that the PRC ruling is inconsistent and contradicts the intent of the law. He asked for an amendment to state law to clarify definitions of rural incumbent carriers, require disparate or relaxed procedures for rural incumbent carriers, allow parties to communicate with public regulation commissioners under specific conditions and require written and electronic disclosure.

Questions and discussion by the committee addressed:

- the decline of landline usage and its effect on capital cost per customer;
- the reduction of employees and service as a result of landline service abandonment;
- the service area of Sacred Wind;
- the status of broadband service to the Navajo Nation;
- the request of public regulation commissioners to attend the November meeting; and
- letters from the chair on deregulation, Sacred Wind issues and rural exchange carrier funding.

High Technology Work Force Development

Steve McCleery and Dr. Robert Rhodes, NMJC, described the college's educational and training program to the committee.

Dr. Johann A. Van Reneen, professor and associate vice president for research initiatives at the University of New Mexico, explained the role of his university in basic or pure research, applied research, high-technology training and community-based research.

Diane Burke, dean of workforce and economic development at the Central New Mexico Community College Workforce Training Center, described the New Mexico Energy Consortium of Community Colleges that received a \$15 million grant from the federal Department of Labor.

Greg Fant, associate vice president and deputy provost at NMSU, told the committee that his university is the state's land grant institution and one of three research universities in the state. Along with 12 agricultural science centers, cooperative extension connections in all 33 counties and four community college campuses, he said that NMSU celebrates a diverse approach to education. Work force development grows out of a strong educational foundation where students learn how to thrive not only in the known opportunities of today, but also to have the ability to continue growing for the unknown opportunities of the future, he explained.

Questions and comments from the committee addressed:

- the Silicon Mesa Company;
- the use of electronic medical health records;
- customized training;
- remedial education needs;
- refresher training and continuing education;
- the percentage of foreign-born students in science, math and engineering compared to New Mexico natives;
- charter high schools for energy;
- the number of students enrolled in science and technology disciplines and graduate programs;
- the institutions' visions for research and development in New Mexico;
- national laboratory rates of hiring New Mexico graduates;
- the consortium of universities and national laboratories; and

- the efficacy of tax credits for science, technology and mathematics training.

Advanced Water Treatment Systems

Ned Godshall, Altela, Inc., told the committee that Altela employs 50 people in New Mexico to treat salty water using evaporation rather than reverse osmosis. He said that the venture capital money to start Altela came from the state severance tax revenues devoted to venture equity investments provided in statute.

Edward Stock, Gator Hydro-Incineration, LLC, described his company's technology as a green alternative for the disposal of produced water on oil and gas well locations. He characterized his company's process as one that "incinerates" the production water. He said that Gator Hydro-Incineration is seeking funding to ensure that the infrastructure, inventory and manufacturing facilities are ready to meet demand.

Questions and comments by the committee addressed:

- the number of employees from New Mexico;
- how the State Investment Council directs its investments in venture capital;
- the benefits of tax credits; and
- the definition of produced water.

The chair said he would entertain a request to the committee to clarify the state's policy on produced water.

The committee recessed at 5:00 p.m.

Thursday, August 2

Interested committee members met at the Bob Moran Building parking lot to be driven to the URENCO USA facility outside Eunice for a tour. They returned to the parking lot, and the committee adjourned at 1:00 p.m.